

## APPENDIX G CIVIL DESIGN SECTION

### TIMBER CREEK

#### INTRODUCTION

The selected plan buys out homes along Timber Creek in the city of Austin, Texas. The buyout plan consists of acquiring about 82 structures on 91 parcels within the flood plain. This area is just east of Austin-Bergstrom International Airport and is bounded by South FM-973 on the west and Pearce Lane on the south. There are about 82 residences on about 40 acres of land southwest of Timber Creek to be demolished. These residences consist of manufactured homes to stick and brick homes. After these residences are acquired, the dwellings will be demolished and removed from this area. Some HTRW material will be anticipated in these houses to be demolished (See write-up for HTRW). Some of the utility lines will be saved if needed for other houses not to be demo or the proposed recreational facilities. The existing roads and driveways will be demolished and re-established with vegetation unless the existing roads are needed for the recreation plans or maintenance.

#### DESIGN

A demolition plan will be awarded as soon as enough property is acquired for a reasonable contract. Houses will be demolished in accordance to the latest HTRW rules and regulations. The contractor will be allowed to salvage the housing units if economical feasible and done in a timely manner. Temporary vegetation will be used for erosion control until permanent vegetation is planted. No houses will be left abandoned for long periods of time after being acquired. Significant trees will be preserved for the future recreation areas. Roads will be demolished in accordance with the approved plan and replaced with vegetation. Utility lines in this area will be maintained until the need for the utilities are gone.

**Table for Demolition Quantities**

Items	Unit Measure	Estimated Quantities
Manufactured		
Single	Each	40
Double	Each	38
4-Houses w/slabs	SF	6,000
Roads-Asphalt	Square Feet	166,800
Utilities/lot	Each	82
Fences	Linear Feet	16,400

#### RELOCATION PLAN

A comprehensive plan of relocating utilities and roads will be developed before any demolition occurs. Utilities shall consist of water, sewer, electric, communication, and gas lines. The utilities will be removed from above the ground and beneath the ground to three feet deep. Sewer lines below this limit will be flushed and plugged. The existing roads that are involved in this project include Hedgerow Place, Timber Creek Drive, Ascot Way, Benson Way, and Foxhead Drive on the southwest side of Timber Creek. The last 100 feet of Benson Way will be saved before the intersection with Whirlaway Drive.

## RECREATION PLAN

Preliminary recreational plans have been developed for Timber Creek (See the appendix for recreation for Timber Creek). A comprehensive master plan for Timber Creek Park must be developed before proceeding into construction drawings. Cost estimate for recreational facilities is based on number of facilities needed for this area. More realistic numbers for recreational facilities will be generated with the help of the City of Austin in the future.

**Table for Recreation Quantities-Timber Creek**

Items	Unit Measure	Estimated Quantities
Single Picnic Shelter (10'X16')	Each	20
Small Group Shelter (20'X32')	Each	8
BBQ Grills	Each	36
Trash Receptacles	Each	14
Dumpsters Pad	Each	1
Water-borne Toilet	Each	1
Parking Spaces-Asphalt (30')	SF	6,000
Access Road-Asphalt (24')	LF	1,000
Landscaping-Trees	Acre	10
Playscape (2400SF)	Each	1
Large Group Shelters(40'X64')	Each	1
Large BBQ Grill	Each	2
Volleyball Court (30'X50' sand)	Each	2
Trash Receptacles	Each	6
Dumpsters Pad	Each	1
Parking Spaces-Asphalt (30 vehicle)	SF	6,000
Access Road - (24' wide)	LF	1,000
Landscaping	Acres	5
Playscape (2400SF)	Each	1
Trails-10' Concrete	LF	1,240
Trails-Unpaved (6' wide)	LF	5,310
Gates-20' Wide	Each	3
Turfing-Demolition Areas	Acres	10
Basketball Court(94'X50')	Each	2
Park Entrance Signs	Each	3
Directional Signs	Each	5
Traffic Signs	Each	10
Utilities		
Electrical	Job	Sum
Water	Job	Sum
Sewer	Job	Sum

## ONION CREEK FOREST/YARRABEE BEND

### INTRODUCTION

The selected plan buys out homes along Onion Creek in Yarrabee Bend area within the city of Austin, Texas. The buyout plan consists of acquiring about 399 single residence homes within the flood plain. This area is bounded by South Pleasant Valley Road on the west, East William Cannon Drive on the north, and Running Water Drive on the east. There are about 326 houses west of Onion Creek to be demolished and another 73 houses east of Onion Creek to be demolished. These residences consist of manufactured homes to stick and brick homes. After these residences are acquired, the dwellings will be demolished and removed from this area. Some HTRW material will be anticipated in these houses to be demolished (See write-up for HTRW). Some of the utility lines will be saved if needed for the proposed recreational facilities. The existing roads and driveways will be demolished and re-established with vegetation unless the existing roads are needed for the recreation plans or maintenance.

### DESIGN

A demolition plan will be awarded as soon as enough property is acquired for a reasonable contract. Houses will be demolished in accordance to the latest HTRW rules and regulations. The contractor will be allowed to salvage the housing units if economical feasible. Temporary vegetation will be used for erosion control until permanent vegetation is planted. No houses will be left abandoned for long periods of time. Significant trees will be preserved for the future recreation areas. Roads will be demolished in accordance with the approved plan and replaced with vegetation. Utility lines in this area will be maintained until the need for the utilities are gone.

**Table for Demolition Quantities-Forest/Yarbee Bend**

Items	Unit Measure	Estimated Quantities
Manufactured Units		
Single	Each	67
Double	Each	62
270-Houses w/slabs	SF	546,000
Roads-Asphalt	Square Feet	644,320
Utilities/lot	Each	399
Fences	Linear Feet	72,360

### RELOCATION PLAN

A comprehensive plan of relocating utilities and roads will be developed before any demolition occurs. Utilities shall consist of water, sewer, electric, communication, and gas lines. The utilities will be removed from above the ground and beneath the ground to three feet deep. Sewer lines below this limit will be flushed and plugged. Existing roads that become dead ends will have adequate means of turning around for vehicles as large as school busses. The existing roads that are involved in this project include Shady Cedar Drive, Onion Creek Drive, Sand Hill Drive, Little Cypress Lane, Thornwood Drive, Thatch Lane, Thornhill Drive, Catclaw Court, Thatch Court, Vine Hill Drive, Springville Lane, Firefly Drive, Honeybee Bend, Katydid Lane, Wild Onion Drive, Onion Crossing Drive, Ladybug Street, Walkingstick Lane, and Glowworm Circle on the west side of Onion Creek. The roads involved in this project on the east side of Onion Creek consist of Dixie Drive, Orleans Drive, Lake Charles Drive, and Antoine Circle.

## RECREATION PLAN

Preliminary recreational plans have been developed for Yarbee Bend of Onion Creek (See the appendix for recreation). A comprehensive master plan for Onion Creek Park must be developed before proceeding into construction drawings. Cost estimate for recreational facilities is based on optimum number of facilities. More realistic numbers for recreational facilities will be generated with advice from the City of Austin.

**Table for Recreation Quantities-Forest/ Yarbee Bend**

Items	Unit Measure	Estimated Quantities
Single Picnic Shelter (10'X16')	Each	32
Small Group Shelter (20'X32')	Each	32
BBQ Grills	Each	96
Volleyball Court (30'X50' sand)	Each	17
Trash Receptacles	Each	14
Dumpsters Pad	Each	1
Water-borne Toilet	Each	1
Parking Spaces (50)	SF	10,000
Access Road - (24' wide)	LF	1,000
Landscaping-Trees	Acre	10
Playscape (2400SF)	Each	1
Large Group Shelters(40'X64')	Each	1
Large BBQ Grill	Each	2
Volleyball Court (30'X50' sand)	Each	2
Water-borne Toilet	Each	1
Trash Receptacles	Each	6
Dumpsters Pad	Each	1
Parking Spaces (50)	SF	10,000
Access Road - (24' wide)	LF	1,000
Landscaping	Acres	1
Playscape (2400SF)	Each	1
Footbridges (10' Wide)	LF	80
Trails-10' Concrete	LF	9,680
Trails-Equestrian(10' Wide)	LF	7,400
Trails-Unpaved (6' wide)	LF	7,860
Trails-3'-4' Natural Material	LF	5,280
Gates-20' Wide	Each	3
Turfing-Demolition Areas	Acres	14
Disk Golf ( acres)	Each	1
Basketball Court (94'X50')	Each	4
Tennis Courts (27'X78')	Each	2
Open Fields	Acres	12
Park Entrance Signs	Each	3

Items	Unit Measure	Estimated Quantities
Directional Signs	Each	5
Traffic Signs	Each	10
Festival Grounds(11 Acres)	Each	1
Utilities		
Electrical	Job	Sum
Water	Job	Sum
Sewer	Job	Sum

## BEAR/ONION CONFLUENCE

### INTRODUCTION

The selected plan buys out homes along Bear Creek in Travis County, Texas. The buyout plan consists of acquiring 4 structures within the flood plain. This area is in south Travis County and just about one mile west of I-35. These four residences are located on Stagecoach Way just off of Arroyo Double Drive. These residences are slab on grade homes that are not that old. After these residences are acquired, the dwellings will be demolished and removed from this area. No HTRW material is anticipated in these houses to be demolished. The utility lines will be removed or abandoned from these houses. Stagecoach Way will not be demolished because it serves access to other houses and property.

### DESIGN

A demolition contract will be awarded as soon as all four properties are acquired. Houses will be demolished in accordance to the latest state rules and regulations. The contractor will be allowed to salvage the housing units if economical feasible and is done in a timely manner. Temporary vegetation will be used for erosion control until permanent vegetation is planted. No houses will be left abandoned for long periods of time after being acquired. Significant trees will be preserved. Roads will not be demolished. Utility lines in this area will be maintained until the need for the utilities are gone.

**Table for Demolition Quantities-Bear/Onion Confluence**

Items	Unit Measure	Estimated Quantities
Manufactured Units		
Single	Each	0
Double	Each	0
4 Houses w/slabs	SF	10,000
Roads-Asphalt	Square Feet	0
Utilities/lot	Each	4
Fences	Linear Feet	800
Turfing-Native Grass	Acre	4

### RELOCATION PLAN

Utilities shall consist of water, sewer, electric, communication, and gas lines. The utilities will be removed from above the ground and beneath the ground to three feet deep. Sewer

systems below this limit will be flushed and plugged. The existing roads that are involved in this project include Stagecoach Way on the left bank of Bear Creek. Stagecoach Way will remain.

## **RECREATION PLAN**

No recreational plans are proposed for this area. The area will be restored for wildlife purposes.

## **WILLIAMSON CREEK**

### **INTRODUCTION**

The selected plan consists of widening Williamson Creek in four areas within the south side of Austin, Texas. The plan for widening consists of creating a flat berm on one side of the creek two feet above the natural low flow channel. The berm will consist of 2 % initial slopes and slopes increasing to 1V:3H where the excavation day lights. The vertical depth of excavation is a maximum of 10 feet. Williamson Creek has no minimum flows and is prone to flash floods. No recreation opportunities have been identified for Williamson Creek.

### **DESIGN**

Four areas on Williamson Creek have been identified as needing additional flood reduction protection. These reaches of Williamson Creek are Heartwood, Radam, Broken Bow, and Baytown Loop.

Heartwood reach is about 1,200 linear feet long improved channel and the benching is on the right bank for the reach between Heartwood Drive and Congress Avenue South. The width of the benching varies from 0' to 150'. This improved channel will protect houses along Heartwood Drive from flooding for less severe floods.



Heartwood Reach-Williamson Creek-Upstream of Congress Avenue South

B. The Radam reach is about 1,300 linear feet long improved channel and the benching is on the right bank. The width of the benching is from 0' to 300'. This stretch of Williamson Creek is between Radam Circle and Meadow Creek Drive. Emerald Forest Drive Bridge crosses this improved channel, but the bridge will not be modified. This improved channel will increase the flood protection for houses on both sides of Williamson Creek. One house at the end of Radam Circle closest to Williamson Creek is scheduled for being bought-out.



Radam Reach-Williamson Creek-Emerald Forest Bridge



C. Broken Bow reach of Williamson Creek is located between Manchaca Road and Jones Road. This reach is approximately 3,000 linear feet long. The width of the benching is from 0' to 130'. 900 feet of the channel widening is on the left bank and the rest of the improvement is on the right bank. Houses along Broken Bow and Buckskin Streets will not be flooded as frequently after the excavation.



Broken Bow-Williamson Creek-Upstream of Jones Street

D. Bayton Loop Reach of Williamson Creek is about 3,000 feet long. The width of the benching is from 0' to 250'. 1,200 feet of the improved channel is on the left bank of Williamson Creek, and after going through the bridge at West Gate Boulevard, the improved channel is on the right bank. Sunset Trail (Clarmac Drive) and Bayton Loop Streets are on either side of Williamson Creek above West Gate Boulevard. Buffalo Pass and Indio Drive are on either side of Williamson Creek below West Gate Boulevard. Valley Creek Park is on the upper end of this reach on Reese Drive.





### Bayton Loop Reach of Williamson Creek

The terrain along Williamson Creek has many trees of significant size to be surveyed and protected, if possible. Before creating the bench areas, all vegetation and structures will be removed and properly disposed of. Rock excavation will be a major cost concern for these areas. Erosion protection and care of water during construction will be address during the design stage of this project. The local sponsor will need to identify an appropriate disposal site for the excavation and provide points of contact for utilities. See Geotechnical Report for the type of material to be excavated.

#### Excavation Quantities

Reach	Unit of Measure	Estimated Quantity
Heartwood	Cubic Yards	10,000
Radam	Cubic Yards	8,200
Broken Bow	Cubic Yards	15,600
Bayton Loop	Cubic Yards	38,600

### RELOCATION PLAN

No major relocations of bridges or roads are anticipated for this project. Some storm drainage, sewer, and water are anticipated to be relocated, but should not be a major cost to the Williamson Creek portion of this project. During PED stage, detailed survey of the utility lines will be performed to determine which utilities need to be relocated or protected.

## **RECREATION PLAN**

No recreational plans have been developed for these different reaches of Williamson Creek.